

**Notice of Allowability**

Application No.

10/661,573

Applicant(s)

YOUM, JANG-HYOUN

Examiner

Danny Nguyen

Art Unit

2836

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to "The amendment filed 3/2/2006".
2. ☒ The allowed claim(s) is/are 4,7-10,13-23 and 25-28.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 11/30/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's attorney Michael E. Kondoudis on 5/5/2006.

The application has been amended as follow:

Claim 25, line 11, the word "the capacitor" changes to "the capacitance".

### ***Allowable Subject Matter***

2. Claims 4, 7-10, 13-23, 25-28 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 recites a power supply device having an AC power supply, a rectifier which rectifies power supplied from the AC power supply, and a capacitor which smoothes power rectified by the rectifier comprises a first relay which selectively connects a node between the switching unit and the diode to one of the second end of the inductor and the second end of the resistor, a controller which controls the first relay to connect the node and the second end of the resistor if a voltage applied across the capacitor exceeds a predetermined PFC voltage limit, wherein the controller controls the first relay to connect the node between the diode and the switching unit and the

Art Unit: 2836

second end of the inductor if the voltage applied across the capacitor and detected by the capacitor voltage detector becomes lower than the predetermined PFC voltage limit.

Claim 7 recites a power supply device having an AC power supply, a rectifier which rectifies power supplied from the AC power supply, and a capacitor which smoothes power rectified by the rectifier comprises a first relay which selectively connects a node between the switching unit and the diode to one of the second end of the inductor and the second end of the resistor, a controller which controls the first relay to connect the node and the second end of the resistor if a voltage applied across the capacitor exceeds a predetermined PFC voltage limit, a second relay which is selectively connects the rectifier with one of the first end of the inductor and the second end of the resistor, the controller controls the second relay to connect the rectifier to the second end of the resistor so that power rectified by the rectifier is supplied to the capacitor through the resistor when power is initially supplied, and wherein the controller controls the second replay to connect the rectifier to the first end of the inductor if the voltage applied across the capacitor exceeds a predetermined reference charging voltage in a state that the second relay is connecting the node between the diode and the switching unit and the second end of the inductor.

Claim 13 recites a method of controlling a power supply device having an AC power supply, a rectifier which rectifies power supplied from the AC power supply, and a capacitor which smoothes power rectified by the rectifier, a switching unit, a diode having a cathode connected to the capacitor and an anode connected to the switching unit, and an inductor connected between the rectifier and a node between the switching

Art Unit: 2836

device and the diode comprises steps of providing a resistor connectable in parallel with the diode, disconnecting the inductor and the node between the switching unit and the diode, and connecting the resistor and the node between the switching unit and the diode if a detected voltage across the capacitor exceeds a predetermined PFC voltage limit, disconnecting the resistor and the node between the switching unit and the diode and connecting the inductor and the node between the switching unit and the diode if the detected voltage applied across the capacitor becomes lower than the predetermined PFC voltage limit.

Claim 25 recites a power supply device for supplying input power to an inverter to drive an AC motor from an input power comprises an over-voltage protection circuit which selectively discharges the capacitance through the limiting resistance to limit a voltage across the capacitance to a predetermined maximum, a voltage detector which detects the voltage cross the capacitance, a switching apparatus which selectively connects the resistance to perform one of limiting the inrush current and discharging the capacitance, and a controller which controls the switching apparatus in response to the detected voltage.

The references of record do not teach or suggest the aforementioned limitations, nor would it be obvious to modify those references to include such limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

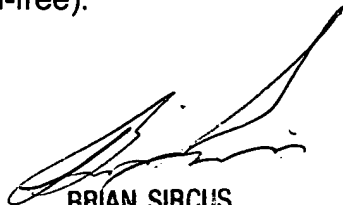
Art Unit: 2836

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN

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5/5/2006



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